Section 2: DATA COLLECTION

Risk Assessment Data Needs:

EPA's Risk Assessment Guidance for Superfund notes:

The sampling strategies for a site must be appropriate for use in a quantitative risk assessment; if [the sampling strategy is] inappropriate, even the strictest [quality assurance/quality control] procedures ... will not ensure the usability of the sample results (RAGS section 4.6).

Many of the recommendations in this section are based on specific data needs for human exposure pathway evaluation or other critical components of the risk assessment. Design of a appropriate data collection effort requires a preliminary identification of the potential human exposure pathways at the site. This task requires the professional judgement of an experienced risk assessor and is one of the most important reasons for early involvement of the risk assessor in the site evaluation project.

Background Sampling:

A sufficient number of background samples should be obtained for each contaminated media (soil, air, groundwater, etc.) at the site. An appropriate number of background samples might equal 5-10% of the number of samples collected, of each media, to define nature and extent of contamination. If the total number of samples gets very large (e.g. in excess of 100/media) a lower percentage may be acceptable, especially if many samples are repeats from the same location.

Background samples are important because the goals of the site investigation and risk assessment are to determine the potential health risks of chemical exposures occurring as a result of site-related contamination. Many site investigations are compromised, often with attendant overestimation of risks, by insufficient background sampling.

Sampling Locations:

An important goal of the site investigation is provide sufficient data for an accurate assessment of potential health risks, thus the sampling effort should be directed at defining the potential for, and magnitude of, human exposures to contamination at the site. An initial evaluation of potential exposure pathways is critical to identifying which media (e.g., soil, water, air) and which locations are most appropriate in the sampling effort.

Sampling of other (i.e., those not related to human health risk assessment) media and/or